

**TRIBAL RESOURCE MANAGEMENT PLAN 4(d) RULE
PROPOSED EVALUATION AND PENDING DETERMINATION**

Title of TRMP: Tribal Resource Management Plan for Snake River Spring/Summer Chinook in the Imnaha River Subbasin

TRMP Provided by: The Nez Perce Tribe

Action Area: Imnaha River subbasin, Oregon

ESU: Snake River spring/summer chinook salmon

4(d) Rule Limit: Tribal 4(d) Rule [50 CFR 223.209]

NMFS Tracking Number: NWR/4d/14/2002/001

Date: May 16, 2002

BACKGROUND

The Tribal 4(d) Rule

This “Evaluation and Determination” constitutes an analysis of available information and a determination regarding the impact of the Nez Perce Tribe’s (NPT) Tribal Resource Management Plan on the biological requirements of protected spring/summer chinook in the Imnaha River subbasin.

Pacific salmon populations fluctuate from year to year, but over the long term (since at least the early 1900s), streams and rivers have been producing fewer and fewer fish, eventually prompting Federal listing of many distinct groups of salmon and steelhead up and down the West Coast under the Endangered Species Act (ESA). In response to these listings, the National Marine Fisheries Service (NMFS) issued a final Rule under ESA section 4(d) establishing and modifying the application of section 9 take prohibitions for threatened salmon and steelhead (July 10, 2000, 65 FR 42481 [50 CFR 223.209]). The rule establishes a limitation on ESA take prohibitions for Tribal Resource Management Plans (TRMPs) where the Secretary of Commerce has determined that implementing the TRMP will not appreciably reduce the likelihood of survival and recovery of the listed species. The Rule also reiterated that the United States has a unique legal relationship with Indian Tribes as set forth in the Constitution, treaties, statutes, executive orders, and court decisions, and established a process to meet the conservation needs of protected species while respecting tribal rights and meeting federal trust

responsibilities. The Rule also requires the Secretary, in consultation with the Tribes, to use the best available scientific and commercial data (including any Tribal data and analysis) to determine the TRMP's impact on the biological requirements of the species and reinforces the commitment to government-to-government consultations as expressed in Secretarial Order 3206.

The Imnaha River subbasin is located within the Snake River basin in northeastern Oregon (Figure 1). This portion of Oregon is within the ceded area of the NPT. The Tribe and the State of Oregon have joint management responsibility for chinook salmon in the Imnaha River, which are also under the continuing jurisdiction of *United States v. Oregon*, the ongoing Federal court proceeding to implement and enforce reserved treaty fishing rights.

Following a *U.S. v. Oregon* dispute resolution in 1993, the NPT and the Oregon Department of Fish and Wildlife (ODFW) cooperatively developed hatchery and harvest programs to help restore Imnaha River spring/summer chinook salmon. The hatchery program is experimenting with protected chinook salmon to enhance salmon production in the Imnaha River subbasin and is currently covered under ESA section 10 (a)(1)(A) permit #1128 (NMFS 2000). The hatchery's objectives, as listed in the permit are: 1) to restore natural populations of chinook salmon in the Imnaha River subbasin to ESA delisting levels, 2) to reestablish traditional tribal and recreational fisheries for chinook salmon, 3) to maintain the genetic and life history characteristics of the endemic wild population while pursuing mitigation goals and management objectives, and 4) to operate the hatchery program to ensure that the genetic and life history characteristics of the hatchery fish mimic the wild fish. To realize these objectives, a sliding scale developed by the NPT and ODFW sets criteria for managing adult chinook salmon returning to the Imnaha River weir (Table 1; Table 2).

Table 1. Sliding scale allocation for spring/summer chinook salmon returning to the Imnaha River at the Gumboot Weir (ODFW 1998).

Estimated total adult escapement to the Imnaha River mouth	Ratio of hatchery to natural adults at the mouth	Maximum % natural adults to retain for broodstock	Maximum % hatchery adults to retain for broodstock	Maximum % adults of hatchery released above the weir	Minimum % of broodstock of natural origin
<50	Any	0	0	a	NA
51-700	Any	50	50	a	a
701-1000	Any	40	a	70	20
1001-1400	Any	40	a	60	25
>1400	Any	30	a	50	30

NA – Not applicable.

a – Percentages determined as a result of implementing other criteria, therefore not a decision factor.

Table 2. Imnaha spring/summer chinook management guidelines (ODFW 1998).

Escapement Level	Start Captive Brood Program	Collect for hatchery broodstock and spawn	Release to spawn naturally above weir	Outplant (hatchery fish only) to Big Sheep, Lick Creeks, and other habitat	Harvest for Tribal Ceremonial Use	Harvest for Tribal Subsistence	Constraints on % of hatchery or natural for release or broodstock	Recreational Harvest
<300 for 2 consecutive years*	Yes	No	No	No	**	**	No	No
51-700	No	Yes	Yes	No	Yes	**	No	No
>700 (see criteria below)	No	Yes	Yes	Yes	Yes	Yes	Yes	**

Criteria and Priorities for fish trapped at the weir:

- Retain natural adults at the maximum allowable percentage defined in the sliding scale up to that needed to achieve the egg take goal of 576,500 green eggs.
- Retain hatchery adults to meet broodstock needs at the rate equal to the number allowable to meet the minimum percentage of broodstock that must be natural origin. Spawn all fish that are collected for broodstock.
- Do not retain more than 320 (160 females and 160 males) adults for combined natural and hatchery broodstock.
- Release hatchery fish above the weir up to the rate equal to the percentage of adults released above the weir that can be hatchery origin.
- Hatchery fish that are excess to what is needed for broodstock and releases above the weir will be outplanted to Big Sheep and Lick Creek or harvested.
- No more than 10% of males placed above the weir will be hatchery origin jacks. All other hatchery jacks will be spawned with the total hatchery jack contribution to fertilization not to exceed 10% of the eggs.

*Co-managers would submit a modification to the existing permit application to initiate a captive broodstock component for the Imnaha program.

** Decision would be made on a case-by-case basis.

Projected Imnaha River subbasin 2002 Salmon Return and Management Plan

The projected return in 2002 of natural-origin spring/summer chinook salmon to the Imnaha River is 2,665 fish (Table 3). This would be the third largest return since 1957 (Table 4).

Table 3. Projected returns of spring/summer chinook salmon to the Imnaha River in 2002 (ODFW 2002).

	Adults	95% Confidence interval	Jacks	95% Confidence interval	Total
Hatchery origin	3,414	1,669 – 5,161	217	59-374	3,631
Natural origin	2,598	1,237 – 3,961	67	25-109	2,665
Total	6,012	2,906 – 9,122	284	84 – 483	6,296

Table 4. Estimated annual return of naturally-produced spring/summer chinook salmon to the Imnaha River 1957-2001 (from ODFW 2001), and the 2002 projected return.

Year	Estimated Return	Year	Estimated Return
1957	4,391	1980*	125
1958	1,548	1981*	307
1959	874	1982	1,234
1960	2,070	1983	926
1961	1,280	1984	1,142
1962	1,382	1985	1,573
1963	755	1986	788
1964	1,380	1987	484
1965	1,048	1988	609
1966	1,261	1989	297
1967	1,203	1990	199
1968	1,420	1991	198
1969	1,683	1992	205
1970	976	1993	430
1971	2,049	1994	118
1972	1,884	1995	204
1973	3,061	1996	266
1974	1,529	1997	129
1975	823	1998	255
1976	701	1999	287
1977	871	2000	647
1978	2,291	2001	2,465
1979*	192	2002	**2,665

* Estimates prior to 1982 are based on redd counts above the weir and are not expanded for those fish spawning below the weir location. Data sources: Parker (1997) and data from ODFW files, LaGrande office.

** Preseason estimate from Columbia River TAC

Recreational fishing was closed in the Imnaha between 1979 and 2000 due to low numbers of returning adult salmon and little or no tribal fishing occurred in most years. Declines to alarming levels (redd counts in 1989, 1990, and 1991 were 40, 43, and 51, respectively) prompted the listing of these fish in 1992 under the ESA. Increasing survival in recent years credited to favorable environmental conditions

and to salmon recovery efforts prompted by ESA protections has lead to increasing salmon returns. Because of these increasing returns, the NPT and the State of Oregon conducted limited fisheries in the Imnaha River during 2001 (NPT 2001). The ODFW estimates that non-tribal fishers harvested 302 marked hatchery-produced chinook in 2001; in addition, an estimated 21 marked fish and 433 unmarked fish were caught and released. The NPT estimates that tribal fishers harvested 23 chinook in 2001.

The total take from tribal and non-tribal fisheries together was approximately 779 salmon. Of that take, an estimated 370 adult salmon were killed (including fish harvested and catch and release mortality). The total mortality estimate includes 304 hatchery fish (302 harvested, and up to 2 as a result of mortality incidental to catch-and-release), and 66 naturally produced fish, leaving more than 2,500 natural fish to spawn. The interim natural fish escapement goal recently established for the Imnaha subbasin is 2,500 spawners (Lohn 2002). Approximately 2,665 chinook, progeny of fish that spawned in the Imnaha subbasin during 1997, 1998, and 1999, are expected to return in 2002 together with 3,631 chinook from an experimental hatchery program. Under these circumstances, the NPT and the State of Oregon are again planning for limited fisheries in 2002.

The NPT submitted a TRMP under the 4(d) Rule to NMFS on March 18, 2002 (NPT 2002). Under agreement between the NPT and ODFW to coordinate the management of their fisheries in the Imnaha subbasin, both the tribal and recreational fisheries planned in 2002 have been analyzed and processed together under the Tribal 4(d) Rule. Information used to make this determination comes from the TRMP and from materials referenced by the TRMP including the State of Oregon's 1998 application for a section 10 permit for the Imnaha River Chinook research and enhancement program (ODFW 1998) and the State of Oregon's Annual Operating Plan (AOP) (ODFW 2002) for Imnaha River chinook research and enhancement.

The sliding scale as outlined in Table 2 provides that only Tribal ceremonial harvest may occur when the annual return of salmon is between 50 and 700. At returns in excess of 700 salmon, tribal subsistence harvest may occur and non-tribal recreational harvest may be considered on a case-by-case basis. Following the sliding scale, the co-managers expect that the 2002 Imnaha chinook salmon return will be sufficient not only to meet natural spawner and hatchery broodstock needs, but to support tribal and recreational fisheries.

The TRMP describes first how spawning escapement and hatchery broodstock needs would be met and then describes ceremonial and subsistence fisheries planned by the tribe and recreational fisheries planned by ODFW. The following provides a brief summary of the TRMP and sets the context for NMFS' review.

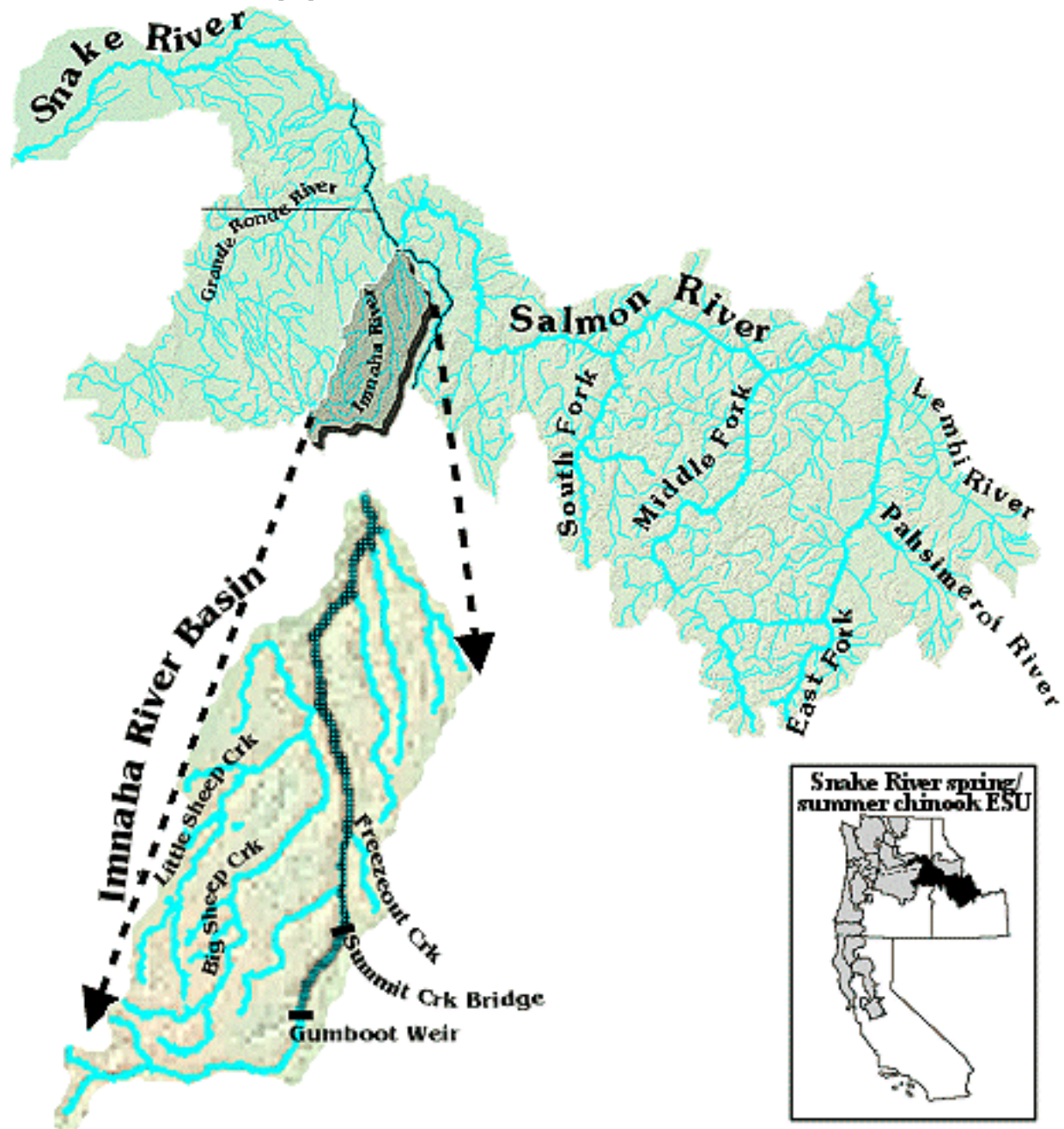
The TRMP covers activities that affect Imnaha River spring/summer chinook salmon that are part of the threatened Snake River spring/summer chinook salmon Evolutionarily Significant Unit (ESU). The NPT and ODFW share management responsibility for these fish. The TRMP describes activities that are

principally conducted by the Tribal government and activities that are principally conducted by the State through cooperative agreements. State fisheries are described in Attachment A to the 2002 AOP (ODFW 2002) which is referenced in the TRMP. As per the Tribal 4(d) Rule, NMFS consulted regularly with the Nez Perce Tribe on the content of the TRMP and on NMFS' analysis and determination that provide for the conservation of listed species.

ESU Description and Geographic Range

An ESU defines a distinct population segment of Pacific salmon that is not interchangeable with other salmon. The number of fish in an ESU perpetuating themselves in streams is the measure of salmon health or recovery. Approximately one third of the habitat that produced Snake River spring/summer chinook salmon has been blocked by dams in Idaho. Important areas including the Powder, Weiser, Payette, Malheur, Boise, Owyhee, and Bruneau river subbasins can no longer produce salmon. The Snake River spring/summer chinook ESU includes fish produced in the Tucannon, Grande Ronde, Imnaha, and Salmon river (See map, Attachment 2). These salmon remain part of the ESU and listed when managers elect to use them in experiments with hatcheries to help boost the number of salmon perpetuating themselves in streams. Experiments like this involving spring/summer chinook salmon are underway in the Imnaha, Tucannon and Grande Ronde rivers, and at the Sawtooth, Pahsimeroi, and McCall hatcheries on the Salmon River.

Figure 1. The geographic range of the Snake Basin spring/summer chinook salmon ESU, including the location of the Imnaha River basin and the area of the proposed tribal ceremonial and subsistence and non-tribal recreational fisheries proposed for 2002.



Most adult Snake River spring/summer chinook salmon return to their subbasins of origin from May through September and spawn in August and September. Juvenile salmon emerge from spawning gravels between February and June. Typically, after rearing in their nursery streams for about one year,

smolts migrate to the ocean in April and May. Upon entering the ocean, these fish are believed to use nearshore areas before beginning a two to four year migration through the northeast Pacific Ocean. Adult fish (a mixture of three-, four-, and five- year-olds) return to the Columbia River in February and March to begin their upstream migration to spawning areas. Substantial scientific information has been compiled upon which to base management decisions relating to these fish and this information is easily accessible to the public (NMFS 1998, 2000).

More than 1.5 million spring/summer chinook salmon returned to the Snake River annually prior to non-tribal settlement of the region. By the 1950s, the population had declined to an estimated 125,000 adults. Escapement estimates indicate that the population continued to decline through the 1970s. Returns were variable through the 1980s, but declined further in recent years. Record low returns of 1,721 and 1,116 fish were observed in 1994 and 1995. Returns were modestly higher from 1996-1998, declined in 1999, and then increased dramatically in 2000 and 2001. The 2002 preseason run prediction is substantially higher than the long term average and may approach the 2001 level. Table 5 reports the estimated annual return of adult spring and summer chinook salmon produced from Snake River Basin streams.

The 2001 return of Columbia River spring chinook salmon produced in hatcheries was the largest ever recorded. Pre-season estimates of the 2002 run are lower, but still among the highest recorded. Because of the substantial numbers of young salmon released by hatcheries, adult returns can be extraordinarily large when environmental conditions are just right. Since ocean conditions in the past several years have been very favorable, the 2002 return of naturally-produced spring chinook salmon return is also expected to be large.

The Imnaha River is one of the drainages expected to receive a considerable return of hatchery and naturally produced adult salmon in 2002. The 2002 projected returns of chinook produced in the Imnaha River and hatchery produced spring chinook are 2,665 and 3,631 fish respectively. Approximately 2,500 spawners that were produced in the river is the preliminary abundance threshold for ESA delisting (Lohn 2002). (Other criteria relating to productivity, distribution, diversity, etc. are forthcoming.) The Imnaha produced a return of 4,391 fish in 1957, the first year such estimates were produced. Since then, returns have exceeded 2,000 fish only five times (1960, 1971, 1973, 1978 and 2001). The 2001 return of 2,465 naturally-produced fish was produced primarily by 402 natural spawners in 1996 and 345 natural spawners in 1997. A spawner to spawner return ratio greater than 1:1 means the population is growing. Spawner to spawner ratios appear to be on the rise in the Imnaha. In 2000, 2.5 fish returned for every naturally produced spawner (ODFW 2001), the 2001 ratio was in the range of 6:1, and expectations are that spawner to spawner ratios will exceed 1:1 in 2002, with 2,414 natural spawners predicted from 345 parents in 1997 and 452 in 1998.

Table 5. Estimates of natural-origin Snake River spring/summer chinook salmon passing Lower Granite Dam, 1979-2001 (Speaks 2000; NPT 2002).

Year	Spring Chinook	Summer Chinook	Total
1979	2,573	2,712	5,285
1980	3,478	2,688	6,166
1981	7,941	3,326	11,267
1982	7,117	3,529	10,646
1983	6,181	3,233	9,414
1984	3,199	4,200	7,399
1985	5,245	3,196	8,441
1986	6,895	3,934	10,829
1987	7,883	2,414	10,297
1988	8,581	2,263	10,844
1989	3,029	2,350	5,379
1990	3,216	3,378	6,594
1991	2,206	2,814	5,020
1992	11,285	1,148	12,433
1993	6,008	3,959	9,967
1994	1,416	305	1,721
1995	745	371	1,116
1996	1,358	2,129	3,487
1997	1,434	6,458	7,892
1998	5,055	3,371	8,426
1999	1,433	1,843	3,276
2000	3,029	2,299	5,328
2001 ¹	40,000	5,000	45,000
2002 ²	24,300	4,800	29,100
Recovery escapement level ³			31,400

¹ preliminary estimate as of 8/1/01² preseason estimate, 3/15/02³ proposed Recovery Plan for Snake River Salmon, NMFS March, 1995

The measured improvement in Snake River spring/summer chinook salmon returns, and for the Imnaha River in particular over the past four years, is the result of beneficial salmon recovery measures and favorable environmental conditions. Beyond 2002, there are concerns about the survival of young salmon that migrated to the ocean in 2001 under poor river conditions. Survivors from the 2001 out-migration will return to spawn primarily in 2003 and 2004.

Description of the Fisheries and the Estimated Take of Protected Fish

The fisheries proposed for 2002 and the projected take of protected spring/summer chinook salmon are described in the NPT's TRMP (NPT 2002). The NPT plans to conduct ceremonial and subsistence fisheries and to cooperate with ODFW to open recreational fisheries during 2002 very similar to fisheries conducted in 2001. Recreational fisheries are only allowed to retain marked hatchery-origin salmon.

The proposed fisheries are limited to specific sites and times within the Imnaha River subbasin and include: (1) fisheries for tribal members until July 31 (under tribal regulations) in the main stem Imnaha, from its confluence with the Snake River upstream to within 60 feet of the hatchery weir, and (2) recreational fisheries for non-tribal members until June 30 (under state of Oregon regulations) in the mainstem Imnaha from its confluence with the Snake River upstream to the Summit Creek Bridge, as described in the 2002 AOP, Attachment A (ODFW 2002). Figure 1 includes the landmarks used for regulation purposes.

Tribal regulations allow the use of traditional fishing methods (dip net, gaff, longbow and spear) and hook and line. Recreational anglers must use hook and line under state regulations (the standard practice). Only adipose-fin-clipped chinook salmon may be retained by recreational fishers; unclipped fish must be returned, unharmed, to the water.

The TRMP sets an overall harvest quota of 630 adult and jack chinook in 2002 (315 for tribal fishers and 315 for recreational fishers), based on a 10% total harvest rate. Hatcheries have been planting fish in the Imnaha River subbasin since 1982. Since 1996, hatchery fish have been marked by removal of the adipose fin, and all hatchery produced fish returning to the Imnaha this year are identifiable by the missing adipose fin. The tribal fishery is expected to harvest 133 natural fish and 182 hatchery fish. Recreational anglers are required to release unmarked salmon that are caught in the Imnaha River. The recreational fishery is proposed to close after harvest of 270 marked, hatchery-produced chinook, or a harvest rate of .075 of the hatchery return. If the natural return is also handled at the .075 rate, 200 natural fish would be caught and released by anglers and 20 fish would be expected to die after release due to injury (at 10% per capture hook-and-release mortality). In total, fishery impacts are projected to be 153 of the 2,665 natural spring/summer chinook salmon returning to the Imnaha in 2002. This amounts to less than six percent of the returning natural spawners.

EVALUATION

The final 4(d) Rule for tribal resource management plans states that the prohibitions of section 223.203(a) of the Rule (16 U.S.C. 1531-1543) do not apply to actions undertaken by a tribe in compliance with a Tribal resource management plan provided that the following elements of the Rule are met:

1. The Secretary has determined pursuant to 50 CFR 223.209 and the government-to-government processes described therein that implementing the plan will not appreciably reduce the likelihood of survival and recovery of the listed salmonids.
2. In making that determination, the Secretary has taken comment from the public on the Secretary's pending determination.
3. The tribal plan must specify the procedures by which the tribe will enforce its provisions.

As per the Rule, NMFS consulted regularly with the Nez Perce Tribe during the development of the TRMP through government-to-government and staff level communications. These occasions provided the opportunity to provide technical assistance, exchange information, and discuss what would be needed to provide for the conservation of the listed species and to be consistent with legally enforceable tribal rights and with the Secretary's trust responsibilities to the tribes.

The following is an evaluation of whether the TRMP adequately addresses the criteria specified in §223.209.

Application of Fisheries Limit Criteria

NMFS has reviewed the TRMP submitted by the NPT and its effect on the Snake River spring/summer chinook salmon ESU in order to determine whether actions taken under the TRMP appreciably reduce the likelihood of survival and recovery of the affected listed ESU. At NMFS' request, the NPT provided the TRMP in the format that NMFS developed for evaluating Fisheries Management and Evaluation Plans (FMEP) under Limit (4) and Limit (6) of the July 10, 2000, 4(d) Rule (65 FR 42422). Limit 4 involves nine criteria that not only describe a fishery but also provide a sound basis for evaluating any biological consequences from conducting the fishery. These criteria were developed under a separate Rule to cover state fisheries and joint state-tribal plans under ongoing Federal court jurisdiction, but they also provide a useful framework for assessing the impacts of TRMPs. NMFS' evaluation of the NPT TRMP is detailed below.

4(d) Fishery Limit Criteria - from CFR 223.203

In considering the effects of this TRMP on listed species, NMFS took into account the following criteria for State Fisheries Management and Evaluation Plans under limit (4) and joint state-tribal plans under limit (6) of the final ESA section 4(d) Rule (65 FR 42481).

Section 4 (i) - Clearly defines the scope and area of impact

The scope of the TRMP is clearly defined, and involves only fishery impacts to spring/summer chinook salmon in the Imnaha River during 2002. The TRMP addresses the allocation of adult salmon among

different beneficial uses, including natural spawning, brood stock collection that supports an experimental hatchery program designed to aid in the recovery of this population, the release of adult spawners into under-utilized spawning habitat within the Imnaha River subbasin, and harvest.

- Sets management objectives and performance indicators for the plan

The TRMP integrates fishery decisions into implementation of the hatchery program and management of salmon returns at the subbasin level. TRMP management objectives are to achieve hatchery brood stock collection needs, adult salmon reintroduction objectives, and appropriate proportions of natural and hatchery salmon on the spawning grounds as described in the Annual Operating Plan (AOP) for the hatchery program (ODFW 2002). The escapement and composition of chinook on the spawning grounds is managed in accordance with a sliding scale that addresses the inter-annual variation in total run size and the proportion of natural and hatchery-origin fish in the return. Performance indicators include dam, weir and redd counts, harvest estimates, escapements, and spawner to spawner ratios for hatchery and natural salmon.

Section 4(i)(A) - Define populations within affected listed ESUs, taking into account spatial and temporal distribution, genetic and phenotypic diversity, and other appropriate identifiably unique biological and life history traits.

Imnaha River spring chinook are the only affected group of 39 sub-populations believed to comprise the Snake River spring/summer chinook salmon ESU. The actions described in the TRMP occur only within the Imnaha River subbasin, and during a time period when only spring/summer chinook salmon are expected to be present.

The artificial propagation program for Imnaha spring chinook is operated specifically to address both demographic and genetic risks, and to minimize the chance of domestication selection. The management protocol requires that hatchery and natural fish are incorporated into both the natural spawning and hatchery broodstock components. The tribal and recreational fisheries are managed within the context of continuing to achieve artificial propagation and natural spawning escapement objectives.

Section 4(i)(B) - Utilize the concepts of “viable” and “critical” salmonid population thresholds, consistent with the concepts contained in the technical document entitled Viable Salmonid Populations (NMFS 2000)

The Viable Salmonid Population paper (VSP) (McElhany *et al.* 2000) describes viable and critical levels for salmonid populations in terms of population abundance, population growth rate, spatial structure and diversity. The NPT and ODFW have analyzed the total abundance, population trends, and occupation of habitat as surrogates for the VSP criteria to make judgements relative to the viability

of the population (ODFW 1998). NMFS' review of Imnaha spring/summer chinook status based on available information is presented below.

Population Abundance

Annual escapements of spring/summer chinook produced in the Imnaha River subbasin are reported in Table 4. The 2002 projected return of nearly 2,500 naturally produced chinook (after the fisheries) exceeds adult returns in all but 3 of the past 44 years.

The number of salmon produced in Snake River tributaries, without dependence on hatcheries to produce fish is one of several considerations in determining when these fish can be removed from the ESA list. NMFS first identified delisting criteria for Snake River spring/summer chinook salmon in 1995 (NMFS 1995). More recently, NMFS has formed a Technical Recovery Team which has begun work to establish population abundance targets for salmon in various Columbia River tributaries including the Imnaha River. NMFS issued an interim abundance target of 2,500 natural spawners for the Imnaha River (Lohn 2002). Future evaluation of activities in the Imnaha River subbasin will include consideration of these targets. The TRMP provides a tool to help manage the proportion of natural and hatchery fish on the spawning grounds and to help achieve viable population abundance levels.

Population Growth Rate

The key criterion for population growth rate is the spawner:spawner ratio or cohort-replacement ratio. Specifically, there must be sufficient productivity from the naturally produced spawners to maintain the population at or above viability thresholds in the absence of the hatchery subsidy. Where self-perpetuating salmon is a goal (as it is in the Imnaha), the proportion of fish from experimental hatchery programs on the spawning grounds must be carefully managed.

A 1:1 spawner:spawner replacement rate means a population is stable (not growing or declining). The most up-to-date available information is for brood year 1995, which returned as 4- and 5-year-olds in 1999 and 2000 with a cohort-replacement ratio of 2.5:1 for natural spawners (ODFW 2001). The 1996 brood year, which returned as 4-year-olds in 2000, and as 5-year-old fish in the 2001 run, appears to have a cohort replacement rate in excess of 2.0:1. The 1997 year class that returned as 4-year-olds in 2001 and is returning as 5-year-olds in 2002 may have a replacement ratio exceeding 6.0:1. Although it is too early to predict the return of brood year 1998 fish, jack counts in the 2001 run and preseason estimates suggest that the return of 4-year olds in 2002 will exceed the parent return of 196 natural spawners in 1998. Three or four consecutive brood-years with spawner:spawner ratios in excess of 1.0:1 is an indicator of population growth and viability, but still falls short of the 8-year geometric mean exceeding 1.0 established by the NMFS 1995 Proposed Recovery Plan (NMFS 1995; Lohn 2002). The TRMP will not result in a significant decrease in replacement rate which, after fisheries, is still expected to be well in excess of 2:1 for both the 1997 and 1998 brood years.

Spatial Structure

It is possible for fisheries to affect the spatial structure of a population and/or ESU. For example, a fishery could target a certain portion of the run, which may result in a substantial decrease in the number of spawners destined to a particular spawning location or population through time. For example, the early portion of a run of salmon may be the fish that migrate the furthest upstream. If the fishery harvests the early returns, the spawning distribution of a population may change.

NMFS expects that spring/summer chinook will be well distributed throughout the Imnaha River subbasin in 2002. Whether fish from the Imnaha population will be induced to stray by population pressures within the Imnaha River subbasin is unknown. There is no indication that the large number of Imnaha returnees in 2001 resulted in increased straying into other Snake River tributaries. The planned harvest of 153 of 2,665 natural spring/summer chinook salmon returning to the Imnaha River is unlikely to have any effect on the spatial distribution of spawners within or outside the Imnaha River subbasin. Both tribal and non-tribal fisheries will occur in the mainstem Imnaha River, not in Sheep Creek or other tributaries in which natural spawning occurs, so as to focus on an area dominated by hatchery-produced fish and hatchery strays.

Diversity

The criterion for viable population diversity dictates that human caused factors, including harvest and artificial propagation, should not substantially alter variation in genetic or phenotypic diversity or substantially alter the rate of gene flow among populations. The Imnaha River artificial propagation program attempts to avoid both demographic and genetic risks, and to minimize the chance of domestication selection. The brood stock management protocol ensures that hatchery and natural fish are incorporated into both the natural spawning and hatchery components.

Implementation of the fishery would remove 153 of 2,665 fish or less than 6% of the naturally produced spawning population. The effects of proposed fisheries are expected to be uniformly and proportionally distributed across the entire return to the Imnaha River in 2002 and do not selectively target any particular component of the return by age, sex, size, or run timing. The fisheries are designed within the context of the artificial propagation program and natural spawning escapement goals, and so would not affect the program's broodstock management protocol. These fisheries are unlikely to have any effect on the genetic or phenotypic diversity of chinook salmon within the Imnaha River subbasin.

Section 4(i)(C) - Set escapement objectives or maximum exploitation rates for each management unit or population based on its status and on a harvest program that assures that those rates or objectives are not exceeded.

The average escapement to the Imnaha River between 1957 and 1967 was approximately 1,560 fish (ODFW 2001). The pre-1970 average redd counts for the Imnaha River, Big Sheep Creek and Lick

Creek trend areas was 321 redds (NMFS 1995). In 2002, the TRMP projects that approximately 2,665 naturally produced spring/summer chinook will return to the Imnaha River (Table 3). After hatchery brood stock collection, adult outplanting and planned fisheries, approximately 2,512 are expected to survive to spawn (Table 6). While there is no single agreed-upon escapement objective for the Imnaha, some work has been done to establish what that level for spring/summer chinook should be. The Columbia Basin Fish and Wildlife Authority Subbasin Planning Process set a goal in 1990 of 3,820 natural fish (Nez Perce Tribe et al. 1990). The Columbia River Treaty Tribes' Tribal Recovery Plan (Wy-Kan-Ush-Mi Wa-Kish-Wit) (CRITFC 1995) proposed a goal of 3,800 natural fish. On April 4, 2002, NMFS issued an interim abundance target for the Imnaha sub-basin of 2,500 naturally spawning, naturally produced fish (Lohn 2002). It is important to note that this target was defined for preliminary ESA delisting purposes, and management objectives may exceed this abundance level.

The TRMP sets both escapement objectives and a maximum exploitation rate for the Imnaha chinook salmon population. Consistent with the sliding scale management strategy resulting from the 1993 *U.S. v. Oregon* dispute resolution, and described in the section 10 Permit application, the NPT and ODFW have determined that the anticipated adult escapement for 2002 is sufficient to meet natural spawner and hatchery brood stock goals as well as support tribal and non-tribal fisheries. The projected escapement (after hatchery broodstock collection, adult outplanting, and planned fisheries) of 2,439 natural spring/summer chinook salmon in 2002 exceeds all but three returns to the Imnaha River since 1957 (4,391 fish in 1957, 3,061 fish in 1973, and 2,465 in 2001) (NPT 2002). This goal is consistent with the interim ESA delisting abundance target as applied to the Imnaha population. Table 6 summarizes the allocation among spawning escapements, hatchery brood stock, and harvest proposed for 2002.

Table 6. Projected distribution of spring/summer chinook salmon returning to the Imnaha River in 2002 (includes jacks and adults) (NPT 2002).

Area	Natural	Hatchery	Total
To River Mouth	2,665	3,631	6,296
Harvest	153	477	630
Number of fish post harvest	2,512	3,154	5,666
To Weir (65% of post harvest return)	1,633	2,050	3,683
Hatchery Broodstock	73	169	242
Outplant to Big Sheep and Lick Cr.	0	300	300
Spawning Upstream of Weir	1,560	1,581	3,141
Spawning Downstream of Weir (35% of post harvest return)	879	1,104	1,983
Total Natural Spawning (mainstem and tributaries)	2,439	2,685	5,124

Section 4(i)(D) - Display a biologically based rationale demonstrating that the harvest management strategy will not appreciably reduce the likelihood of survival and recovery of the ESU in the wild, over the entire period of time the proposed harvest management strategy affects the population, including effects reasonably certain to occur after the proposed actions cease.

As discussed above under section 4(i)(D), the TRMP describes actions that assure that spawning escapements, hatchery brood stock requirements and supplemental adult releases would be achieved in accordance with the annual operating plan (ODFW 2002). The TRMP proposes fisheries that would be limited to a 6% impact on the target population (natural fish) in a year of abundant returns. Natural fish on the spawning grounds are still expected to approximate the preliminary delisting abundance targets, and population growth rate would remain high even with the fisheries implemented. This harvest management strategy, particularly recreational fisheries that target hatchery chinook, is expected to contribute to the survival and recovery of Imnaha River subbasin chinook salmon by managing the proportion of natural and hatchery fish on the spawning grounds.

Section 4(i)(E) - Include effective monitoring and evaluation programs to assess compliance, effectiveness, and parameter validation. At a minimum, harvest monitoring programs must collect catch and effort data, information on escapements, and information on biological characteristics, such as age, fecundity, size and sex data, and migration timing.

In-season monitoring and reporting is required to track the fisheries and assess, in a timely fashion, whether the fisheries are following expectations or exceeding catch limitations specified in the TRMP. A combination of techniques including mandatory reporting, reporting stations, catch cards, and creel census monitoring would be utilized to monitor and evaluate fishing effort. Estimates of harvest and fishing effort would be made and reported weekly. Conservation enforcement officers would conduct catch monitoring and enforce compliance with fishing regulations.

Monitoring information would be used to estimate different fishery parameters including harvest, catch composition and participation. Dam counts and tag detections at mainstem Columbia and Snake River dams would be used to update Snake River spring/summer chinook salmon return information. Refinement of Imnaha returns may be possible from PIT tag detections at the dams. In-season inventory of salmon returns to the Gumboot weir would be used to confirm run size and composition. All activities covered under the TRMP are contained within the Imnaha River subbasin, where fishers are limited to a few access roads, and up to 50% of the harvest is expected to be inspected in the field. An average of 60 to 65% of the total run is captured at the weir where it is enumerated and biological data is collected. Spawning ground surveys cover virtually the entire length of the Imnaha river and tributaries. This high sampling rate for estimating run size and composition and for estimating fishery parameters should lead to accurate monitoring.

Section 4 (i)(F) - Provide for evaluating monitoring data and making any revisions of assumptions, management strategies, or objectives that data show are needed.

As noted under section 4(i)(E), above, co-managers will evaluate fishery monitoring data, dam counts and weir capture data weekly to verify assumptions, refine management strategies, and adjust management actions to ensure that escapement goals are attained and harvest quotas are not exceeded.

Section 4(i)(G) - Provide for effective enforcement and education. Coordination among involved jurisdictions is an important element...

State and Tribal wildlife enforcement officers will be present within the fishery areas making contact with fishers to check compliance with regulations and collecting random creel census information. Mandatory reporting and check stations will increase the interaction between the managers, enforcement staff and fishers, thereby providing opportunities for communication and educational contact with the fishers.

Section 4(i)(H) - Include restrictions on resident and anadromous species fisheries that minimize any take of listed species, including time, size, gear, and area restrictions.

Bull trout is a species that may be affected by the actions taken under the NPT TRMP for the Imnaha River subbasin spring chinook. In the 4(d) Rule issued at the time of bull trout listing, the U.S. Fish and Wildlife Service found that State and Tribal fishing regulations are adequate to protect bull trout from excessive taking and therefore it is not necessary to prohibit take incidental to or in accordance with State and Native American Tribal fish and wildlife conservation laws (June 10, 1998; 63 FR 31647).

No listed adult steelhead or fall chinook are expected to be present in the Imnaha River subbasin during the period of the actions described under the TRMP. State and Tribal conservation regulations are designed to be protective of resident fish species. The regulations for the fisheries proposed under the TRMP are specifically designed to protect listed species and limit harvest to specified quotas.

Section 4(i)(I) - Be consistent with plans and conditions established within any Federal court proceeding with continuing jurisdiction over tribal harvest allocations.

As parties to *U.S. v. Oregon*, the NPT and ODFW are under a court order obligating them to “exercise their sovereign powers in a coordinated and systematic manner in order to protect, rebuild, and enhance upper Columbia River fish runs while providing harvests for both treaty Indian and non-Indian fisheries” (*U.S. v. Oregon* parties 1988). The NPT worked with its *U.S. v. Oregon* co-managers to develop this TRMP, which includes elements of cooperative agreements between the Tribe and State (ODFW 2002; ODFW 1998). The NPT has developed this plan to meet the conservation needs of the protected chinook salmon population while also providing for tribal fishing opportunity.

Notice of Pending Recommendation

As required by the Tribal 4(d) Rule, the Secretary is making available for public review his pending determination as to whether the TRMP would appreciably reduce the likelihood of survival and recovery of the listed salmonids.

Notice of Recommended Determination

As required in (b)(4) of section 223.209 of the ESA Tribal 4(d) Rule, the Secretary will publish notice of his determination as to whether the TRMP appreciably reduces the likelihood of survival and recovery of affected threatened ESUs, together with a discussion of the biological analysis underlying that determination.

PENDING DETERMINATION

NMFS has reviewed the NPT TRMP and evaluated it against the requirements of the Tribal 4(d) Rule and in light of additional considerations specific to the Imnaha River Spring chinook return in 2002. The TRMP is consistent with criteria that NMFS has developed to assess fishery impacts on listed spring/summer chinook salmon.

Pending consideration of comments received, the Northwest Region Sustainable Fisheries Division expects to recommend a finding that implementation of tribal and recreational fisheries in 2002 as specified in the TRMP are consistent with the July 10, 2000 ESA Tribal 4(d) Rule.

Reevaluation Criteria

NMFS will reevaluate this determination if: (1) the quota for incidental harvest of listed fish is exceeded; (2) the actions described by the TRMP are modified in a way that causes an effect on the listed species that was not previously considered in NMFS' evaluation; (3) new information or monitoring reveals effects that may affect listed species in a way not previously considered; or (4) a new species is listed or critical habitat is designated that may affect NMFS' evaluation of the TRMP.

References**Federal Register Publications**

- June 10, 1998 (63 FR 31647) Final Rule; Endangered and Threatened Wildlife and Plants; Determination of Threatened Status for the Klamath River and Columbia River Distinct Populations Segments of Bull Trout. U.S. Fish and Wildlife Service, Department of the Interior.
- July 10, 2000 (65 FR 42422). Final Rule: Endangered and Threatened Species; Final Rule Governing Take of 14 Threatened Salmon and Steelhead Evolutionarily Significant Units (ESUs).
- July 10, 2000 (65 FR 42481). Final Rule: Endangered and Threatened Species; Final Rule Governing Take of Threatened Salmon and Steelhead For Actions Under Tribal Resource Management Plans.

Literature Cited

- Columbia River Inter-Tribal Fish Commission (CRITFC). 1995. *Wy-Kan-Ush-Mi Wa-Kish-Wit: Spirit of the Salmon*. The Columbia River Anadromous Fish Restoration Plan of the Nez Perce, Umatilla, Warm Springs and Yakama Tribes. Columbia River Inter-Tribal Fish Commission. Portland, Oregon.
- Lohn, D.R. 2002. Letter to Frank L. Cassidy Jr. Chairman, Northwest Power Planning Council, with attachment: "Interim Abundance and Productivity Targets for Pacific Salmon and Steelhead listed under the Endangered Species Act in the Interior Columbia Basin." April 4, 2002. 10 pp
- McElhany, P., M.H. Ruckelshaus, M.J. Ford, T.C. Wainwright, and E.P. Bjorkstedt. 2000. Viable salmonid populations and the recovery of evolutionarily significant units. U.S. Dept. Commer., NOAA Tech. Memo. NMFS-NWFSC-42, 156 p.
- National Marine Fisheries Service (NMFS). 1995. Proposed Recovery Plan for Snake River Salmon. NMFS, Portland, Oregon, March, 1995.
- NMFS. 1998. Status Review of Chinook Salmon from Washington, Idaho, Oregon, and California. NOAA Technical Memorandum NMFS-NWFSC-35, February 1998.
- NMFS. 2000. Section 10 (a)(1)(A) Permit for takes of Endangered/Threatened Species. Number 1128; Scientific Research and Enhancement. September 21, 2000.

Nez Perce Tribe (NPT). 2001. Nez Perce Tribal Management Plan for Snake River spring/summer chinook salmon in 2001. Submitted to NMFS April 30, 2001.

NPT. 2002. Nez Perce Tribal Management Plan for Snake River Spring/Summer Chinook Salmon in 2002. Submitted to NMFS - NWR by the Nez Perce Tribe, March 18, 2002.

Nez Perce Tribe, Confederated Tribes of the Umatilla Indian Reservation, and Oregon Department of Fish and Wildlife. 1990. Imnaha Subbasin Salmon and Steelhead Production Plan. Columbia Basin Fish and Wildlife Authority. Portland, Oregon.

Oregon Department of Fish and Wildlife (ODFW). 1998. Application for a permit for scientific research and to enhance the propagation or survival of Imnaha River chinook salmon *Oncorhynchus tshawytscha* under the Endangered Species Act of 1973. Oregon Department of Fish and Wildlife, LaGrande, Oregon.

ODFW. 2001. 2000 Annual Report for Endangered Species Permit No. 1128, ODFW Fish Research and Development, LaGrande Or. 20 pp plus appendices. April 16, 2001.

ODFW. 2002. Annual Operating Plan for the Imnaha River Scientific Research and Enhancement project, including Attachment A. Proposed sport fishery for hatchery spring chinook in the Imnaha River, 2002. Oregon Department of Fish and Wildlife, Northeast Region, LaGrande, OR.

Parker, S. 1997. Memorandum regarding Imnaha spring chinook escapement estimates. December 19, 1997. ODFW, LaGrande, Oregon.

Speaks, S. 2000. Letter to Donna Darm, NMFS re: consultation concerning impacts of proposed 2001 Treaty Indian Fisheries (January 1 - July 31, 2001) in the Columbia River Basin on salmon species listed under the ESA. December 2000. 10p. with attached Biological Assessment.

U.S. v. Oregon parties. 1988. Columbia River Fish Management Plan. 699 F. Supp. 1456.